

Determination of Local Biological Versus Advective Physical Processes and Their Resulting Effects on the Structure of Bio-Optical and Chemical Properties in Possession Sound Using a Network of Autonomous Seagliders

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Abstract

The development of a small underwater glider equipped with sensors to measure temperature, salinity, dissolved oxygen and chlorophyll fluorescence, that moves autonomously through the water column and reports data in real time, allows for measurements of water properties in four dimensions. This work has been developed at the University of Washington Applied Physics Lab and is being tested collaboratively through a National Oceanographic Partnership Program grant to UW, the Washington Department of Ecology, and other agency and industry partners.

A network of gliders was deployed in Possession Sound during July, 2002. We have calibrated the data gained by these gliders and, using information generated by this deployment, can begin to ascertain the impact of advective processes in contrast to local biological processes on the structure of biological and chemical properties in this area. We describe results from the gliders and their in-situ sensors, our methods used to calibrate the data generated, and preliminary work to differentiate between biological and advective effects on the measured water properties.